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ABSTRACT

Analysis of the factors that make a text coherent or non-coherent suggests that total coherence requires cohesion not only on the textual surface but on the semantic level as well. Syntactic evidence of non-coherence includes lack of formal agreement blocking a potential cross-reference, anaphoric and cataphoric references that do not follow their own rules, breaches of collocational restrictions, discrepancies of polysemy or homonymy, discrepancy between referential and metalinguistic meanings, shifts in genericity, violation of normal patterns of placement of old or new information interpreted as a shift of referent, and an unmotivated shift in style. Pragmatic indications of non-coherence include a shift of referent, appearing as a time shift, and explicit or implicit contradiction. Iconic homomorphism results in pseudo-coherence. In semantic terms, a text is coherent if its sentences conform to the picture of a single possible world in the experience or imagination of the receiver, and if this pragmatic unity is signalled on the textual surface adequately for the receiver to grasp the connections. Simple mechanical linking of neighboring sentences must be supported by pragmatic coherence to result in full coherence; otherwise, the text is pseudo-coherent. (MSE)

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COHERENCE, PSEUDO-COHERENCE, AND NON-COHERENCE

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1. Introduction

1.1. In the last decade, students of text and discourse have discussed the basic requirements a string of sentences has to satisfy if it is to be accepted as a coherent text. They have usually defined overall mechanisms contributing to intersentential unity. These mechanisms regulate (a) co-reference involving identity of referent, (b) cross-reference involving referential non-identity but semantic relations in lexis, (c) information dynamics and theme-rheme-focus structure, (d) temporal reference, (e) point of view, and (f) iconic cohesion based on syntactic or phonological homo-morphism. All of these areas have been intensively studied (for an overview and bibliography, see e.g. Enkvist 1975). Thus we know a great deal about anaphora, cataphora and exophora, about deixis, pronominalization and other kinds of substitution, reference, and ellipsis as coreferential and cross-referential devices. We know something about synonymy, hyponymy, hyperonymy and paronymy, about have-relations and inalienable possession, and about other semantic connections as cross-referential mechanisms. (This enables us to explain ties of coherence between Rome and The Eternal City, flower and tulip, tulip and rose, engine and sparking-plug, or ring and finger.) We can look at theme-rheme-focus structures of successive sentences and describe

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the ways in which new and old information weave their paths through the text. We can set up fairly explicit rules for sequences of tenses and other temporal references that well-formed texts have to obey. And, in a less linguistic and more rhetorical or literary frame, we can comment on the unities of point of view in the text. We can also describe how recurrent, homomorphic patterns of sound, metre and syntax can add cohesion to a text. In brief: when explaining what makes coherent texts coherent we need no longer start from scratch.

1.2. By implication, one might think that a lack of such cohesive devices would lead directly to a lack of textual coherence, and vice versa that a lack of coherence would appear as an absence of explicit cohesive devices on the textual surface: if surface cohesion is a necessary condition of coherence, a lack of surface cohesion must result in non-coherence. But language does not work according to such strict implication rules, and, in practical work with concrete texts, the lack of coherence proves to be a complex phenomenon which resists analysis in surface terms alone. Actually, most studies of text linguistics have been preoccupied with the surface devices that give cohesion to a sequence of sentences. Far rarer are papers exploring the more delicate steps between coherence and non-coherence, or discussing the factors that make a text non-coherent (the best example known to me is Harweg 1975).

In this article I shall try to exemplify and discuss some of the factors that make a text non-coherent, particularly in terms of cross-referential and co-referential ties between sentences. How such factors should best be incorporated into a text model, for instance into one that generates texts out of predications and relations between predications, is a problem I shall not be concerned with here.

2. Coherence and non-coherence

2.1. To begin with, there are sentence sequences which at first blush seem to satisfy certain surface conditions of cohesion, but which our intuition nevertheless identifies as textually non-coherent. Such sequences could be called pseudo-coherent. Pseudo-coherence arises when the formal cohesive links on the textual surface fail to reflect an adequate underlying semantic coherence in terms of textuality and contextuality, as in

(1) I bought a Ford. The car in which President Wilson rode down the Champs

Elysées was black. Black English has been widely discussed. The discussions between the presidents ended last week. A week has seven days. Every day I feed my cat. Cats have four legs. The cat is on the mat. Mat has three letters.

Here the semblance of cohesion on the surface is upheld by apparent cross-references: Ford - car, black - black, discussed - discussions, and so forth. But our intuitions tell us that the text is incoherent in spite of such surface ties. On the other hand, the text

(2) George's high pass was headed to the right. The forward shot at once without dribbling and made a goal. The referee declared the kick offside.

makes perfect sense in its own context, though the cross-references that connect its sentences are far less obvious on the surface than those in (1). We might, then, say that (1) is pseudo-coherent whereas (2) is pragmatically coherent.

2.2. If our observation that there can be ties on the textual surface which do not reflect any underlying semantic coherence is right, it follows that sentences can be connected in two different ways: through surface cohesion, and through underlying semantic coherence. Different types of combination of surface cohesion and semantic coherence can be illustrated with the following four connection types:

(3) (A) Do you know John Smith? He came to see me yesterday.
(B) The half-back shot a goal. The whistle blew.
(C) Do you know John Smith? She came to see Peter.
(D) Grandmother died twenty years ago. I shall have lunch with her tomorrow.

In Text A, the semantic reference involves identity between John Smith and he, and it is correctly marked on the surface: he, a masculine pronoun, agrees with John. Here, then, both the semantic coherence and the surface cohesion are in order. In Text B, the semantic coherence is all right: we know that umpires blow whistles and half-backs shoot goals in the context of a football match. But there is no overt syntactic connective between the two sentences. The connection is thus semantic rather than syntactic: the semantic coherence is marked through lexical cross-reference between whistle

and half-back shot a goal, a cross-reference well known to football fans. In Text C, the lack of concord between John and she destroys any potential surface cohesion, and there is no semantic cross-reference between these two sentences which could tie them together. Therefore, as it stands, C is deviant as a text. (One could, however, think of wider situational and textual contexts which might add some coherence to these two sentences.) In Text D, there is syntactic agreement between grandmother and her, but the potential coreference is affected by pragmatic considerations. Our experience of the normal world tells us that we cannot have lunch with people who died twenty years ago. Therefore, if the text is to make sense, either she in fact does not refer to grandmother, or then the text refers to a world different from ours, for instance to a science-fiction or spiritist universe. This suggests that underlying semantic coherence builds on two contributing factors: proper patterns of coreference or cross-reference, and pragmatic acceptability. Full coherence presupposes that syntax, semantics, and pragmatics are in order.

To summarize, we can place Texts A, B, C, and D into a two-dimensional grid:

	coherent text	non-coherent text
Co-reference syntactically marked on the surface	A	D
Co-reference not explicitly marked on the surface	B	C

Texts of types A and B are coherent and well-formed. In the present paper I shall therefore be more interested in sentence sequences of types C and D, particularly with a view to seeing what prompts us to regard them as deviant.

2.3. Before I go on, however, I must make a note of two points which might otherwise provoke comments that I think are irrelevant for the present argument.

First, I am not implying that textual deviance is necessarily a bad thing. In absurd drama, for instance, textual deviance can be used for special effect. Just as syntactic deviance has been an important device for poets (mainly, but far from exclusively, modern ones), so textual deviance is a highly useful technique for those writers who wish to show

how difficult it is for people to understand one another.

Secondly, I am not suggesting that it is enough to discuss coherence in terms of sentence pairs, as in (1). In texts of more than two sentences, coherence patterns must of course extend beyond each pairing of two successive sentences. The general rule is that every sentence of a well-formed text must have a cross-reference to at least one other sentence of that text, and that there has to be an overall coherence involving the text as a whole. Rhetoricians and teachers have sometimes tried to formulate overall coherence rules in terms of topic sentences. Thus a text unit such as a paragraph must have a topic sentence (which can be given explicitly, or construed out of the text unit) to which every sentence of the unit must be connected, either directly or through the mediation of one or more other sentences. Several paragraphs would, in turn, cohere if they can be connected through a common topic or headline, and so forth. Such a view tallies nicely with common sense by corresponding for instance to that familiar structure where sentences form paragraphs, paragraphs sections, sections chapters, and chapters a book, and where each text unit can carry a summarizing title of its own. But as long as we cannot precisely tell when a title is capable of giving coherence to its subordinate text units, we are in the realms of abstract rhetoric rather than concrete syntax.

2.4. We are therefore closer to formal linguistics if we simply try to list some types of relations, here illustrated in terms of ties between two successive sentences, that do NOT qualify as properly cohesive ties. A rough summary classification such as that given above in Section 2.2 may here serve as a starting-point. But it should not be pressed too hard. To begin with, the borderline between syntax and semantics, and surface structures and underlying ones is drawn differently by different linguists. All of linguistic theory would need discussing to clarify such differences of opinion and linguistic climate. Then, there may be texts that resist fitting into any single one of the four slots in our grid. In the following I shall therefore list a number of instances in which the coherence between successive sentences is either non-existent or somehow impaired. In this list I shall prefer concrete exemplification under a fairly large number of fairly delicate headings to a less delicate, reductionist classification. In adapting our classification to the scrutiny of actual texts, they tend to fall into three major categories: (a) those in which there is syntactic evidence (such as lack of formal agreement in number, gender or case) of non-reference, (b) those in which there is clear pragmatic evidence of non-

coherence ('clear', that is, to those with access to the situation and the speaker's presuppositions), and (c) those in which there is neither any clear evidence of non-coherence nor any clear evidence of coherence. These categories will be exemplified in sections 3, 4, and 5 respectively. Section 6 will be somewhat in the nature of an afterthought: It will add an example of a text held together by iconic homomorphism without semantic coherence -- another type of pseudo-coherence.

3. Examples of syntactic evidence of non- coherence

3.1. Lack of formal agreement blocks a potential cross-reference

(4) Susie went to London. Peter had known him for a long time.

Susie and him disagree in gender: if we replace him with her, the text becomes coherent as such, without further contextual justification. This shows that formal agreement is not always a cumbersome device merely increasing redundancies, as Jespersen liked to suggest. Agreement on the contrary has many useful functions: it helps us to group words into constituents, it helps to trace chains of coreference and cross-reference, it blocks undesirable references, and it enables a speaker or writer to vary his word-order patterns according to certain strategies, for instance the requirements of rhythm and metre and thematic progression and emphasis. Latin poetry yields a host of examples where the opportunities of separating elements of the same constituent have been put to fine literary use.

3.2. The relation of a reference to its antecedent has to obey other rules governing anaphora and cataphora

The syntactic correctness of anaphoric or cataphoric reference is not only a matter of formal agreement as to number, gender, case, and person. Anaphoric and cataphoric references follow many other rules. Thus part of what has been called an 'anaphoric island' cannot take an anaphoric reference. 'To breed sheep' may be semantically equivalent to 'being a sheepbreeder', but compare

(5) Harry breeds sheep. He likes their smell.
(6) *Harry is a sheepbreeder. He likes their smell.

Many other relevant examples have been cited (e.g. by Grinder and Postal 1971). The tightness of certain verb-adverbial combinations can also be tested by anaphora:

(7) Susie flew to Berlin. So did I.
(8) Susie flew to Berlin yesterday. So did I this morning.
(9) *Susie flew to Berlin. So did I to London.

So did I must thus refer, not to the verb flew alone but to flew + locative. Breaches of such rules provoke a lack of well-formedness, which need not, however, result in a complete lack of interpretability: the sequences (6) and (9) would presumably be understood in spite of their deviance.

3.3. Breaches against collocational restrictions (selection rules, agreement of semantic features) block the cross-reference, unless the result is acceptable as a metaphor or as a description of a deviant universe.

(10) I have just bought a shirt. It studied at Oxford.

The verb to study collocates with human subjects, and it would be absurd to accept a literal coreference between shirt and it. Nor is there, in this instance, any obvious metaphorical interpretation. Thus if (10) is to be accepted at all, we must also accept a deviant universe running counter to our experience in that shirts can study at Oxford. Whether this kind of deviance is explained in terms of syntactic or lexical models depends on our theory and approach. As long as we operate with a model permitting explicit statements of collocational selection (for instance, a rule stating that verbs marked with the feature ⟨+human⟩ must have subjects marked with ⟨+human⟩) the deviance of (10) can be explained in overt, formal terms. This is why breaches of collocational restrictions have been mentioned here; semantically they are akin to the examples given below in section 5.

3.4. Discrepancies caused by polysemy or by homonymy block the cross-reference.

If in a text one sentence uses one member of a polysemic or homonymic set, and another sentence uses another member of the set, and if the discrepancy is evident in the text through a breach of collocational

restrictions or otherwise inferred by the recipient, the cross-reference between these set members is blocked. For instance

(11) I nailed a board tightly over the hole. {The board / It} made a wise decision.
(12) The hunter clobbered the seal. {The seal / It} was attached to the parchment with a red ribbon.

The collocations and selection rules (nail a board / the board makes decisions, clobber a seal / attach a seal with a ribbon, cf. sect. 3.3.) show that board and board, seal and seal in fact cannot be cross-referential because they represent different subsets of the polysemic or homonymic sets. And this destroys the cohesion.

3.5. The difference between referential meaning and metalinguistic meaning can weaken or block intersentential cross-reference

(13) The cat was on the mat. Mat has three letters.

In the first sentence, mat has the referential sense of 'rug', 'carpet' and refers to an object in the world of discourse. In the second sentence, however, mat is an object for metalinguistic comment, meaning 'the word "mat"'. To what extent the sentences are connected is a matter of discussion; in any case it is obvious that the discourse has shifted from the world of things to the world of words. Note that, just as in 3.3. and 3.4., the shift is signalled by collocation.

3.6. Shifts in genericity can block or weaken the reference.

In English, both the definite and the indefinite article can have a generic function: The cat / a cat is an animal, the cats / cats are animals. It is interesting to see to what extent the shift from a generic to a specific or from a specific to a generic noun phrase affects a cross-referential tie. A few examples.

(14) (a) A cat has four legs. My cat is called Peckie.
(b) My cat is called Peckie. A cat has four legs.
(c) The cat has four legs. My cat is called Peckie.
(d) My cat is called Peckie. The cat has four legs.

(14d) can be read as a coherent text: my cat and the cat can be understood to be coreferential, and here the cat readily has a non-generic reading (though one may wonder in the light of conversational maxims why the fact that Peckie has four legs is worth mentioning: perhaps there were invalid cats around?), in spite of the lack of pronominalization. In (14a-c), however, the interpretation of the four legs - sentence is primarily generic, and the intersentential tie is therefore weaker. In other words: the tie between a generic and a specific noun phrase is weaker than the tie between two generic or two specific noun phrases. This can also be seen in

(15) (a) The cat is a carnivore. {The cat / It} also has sharp teeth.
(b) The cat is a carnivore. *It is called Peckie.
(c) Peckie is my cat. The cat is a tidy animal and can be completely housebroken.

(16) Last night I saw two elks outside my cottage. In fact the elk is multiplying alarmingly on my island.

(15b) is comparatively strongly deviant because it is simultaneously the subject of an individualizing complement (is called Peckie) and coreferential to a generic noun, the cat. In (15a) and (15c), the acceptability is better: in the former sequence, both sentences have a primarily generic reading, whereas in the latter, the cat is a tidy animal may perhaps even allow a specific reading as referring to Peckie. Even in a generic reading such texts seem to allow generalizations advancing inductively from a specific reference in one sentence to a generic one in the next. (16) seems perfectly acceptable, thanks also to the added references to numbers and locations which also tie the sentences to one another.

3.7. A violation of normal patterns governing the placement of old or given, and new, information can be interpreted as a shift of referent and can thus weaken or annul the reference.

The general rule is that new discourse referents are introduced into a text in the rheme; if there is no chance of introducing the rheme by hanging it onto a theme expressing old information, special constructions (existential structures, etc.) must be used. Once a discourse referent has been introduced into the text, it counts as old information. It would take us too far to spell out all the relevant mechanisms, and a very few examples must therefore suffice:

(17) (a) In the room there was a chair. It was blue.
(b) *It was blue. In the room there was a chair.
(18) (a) In Chicago I went to a clinic. The eye-doctor was good.
(b) *The eye-doctor was good. In Chicago I went to a clinic.
(19) (a) The parade marched past. The drums were very loud.
(b) The drums were very loud. The parade marched past.
(c) Last Sunday I went to a parade. The drums were very loud.
(d) *The drums were very loud. Last Sunday I went to a parade.

In (17b), the deviance is caused by the switching of places of the sentence involving an existential structure introducing a new referent, and the sentence with the anaphoric reference. Sentence (18a) is similarly better than (18b) because a clinic is new information, as the indefinite article shows, and because clinics have eye-doctors. A similar relation obtains between (19c) and (19d). Sequences (19a) and (19b) are both acceptable, because their order may reflect the order in which the observations were made and the way in which the sequence is attached to its textual and situational envelope.

If of two potentially co-referential items the latter does not only identify the referent but also adds essential information, the coreference is weakened or annulled. Such a pattern runs counter to the basic principle that anaphoric themes should contain old rather than new information. For instance

(20) (a) ?I read a book last night. The absorbing novel was written by John Masters.
(b) ?I read a book last night. The novel by John Masters was absorbing.
(c) I read a book last night. It was an absorbing novel by John Masters.
(d) I read a novel by John Masters last night. It was absorbing.

But compare

(21) Last night I listened to Benny Goodman. The King of Swing still sounded great.

The reason why (21) is a better sequence than (20a) or (20b) is that Benny Goodman is, uniquely, known as the King of Swing, whereas a book is not necessarily the absorbing novel or the novel by John Masters: these

phrases add essential information. Like all proper nouns, Benny Goodman is definite, whereas a book is an indefinite noun. For correct interpretation of sequences such as (21), we must of course recognize the referential identity of the noun phrases involved.

3.8. An unmotivated shift in style can weaken the cohesion.

In a text such as

(22) (a) This Promotion and Tenure Document in its totality and as approved in its final form by the Committee shall be distributed to all members of the faculty, who shall cast their votes by secret ballot, the official tally being released to the Committee only after all votes have been received. And if you don't catch enough votes, you've had it.

As one result of shifts of style is to signal a break between text units or texts, a shift of this kind suggests a discontinuity in the cohesion pattern, even though the text makes good pragmatic sense. Thus the second sentence of (22) reads rather like somebody's commentary to the rule stated in officialese in the first sentence, and not like a direct continuation of the statute. The cohesion would be tighter had the style shift been motivated, as in

(22) (b) ... only after all votes have been received." To this, Professor Smith had added a marginal comment in his spidery hand: "And if you don't catch enough votes, you've had it."

3.9. Thus breaches against rules of agreement, anaphora and collocation, including discrepancies caused by polysemy or homonymy, referential and metalinguistic meaning, shifts of genericity, violations of normal patterns of given and new information, and shifts in style all suffice to impair or annul the connectivity between juxtaposed sentences. These instances have been grouped together because the signals of non-connection could be labelled as syntactic in the wide sense: concord, selection rules, the distinction between generic and specific meaning, and the treatment of old and new information are all concerns of syntax. (To what extent stylistic shifts are matters of syntax depends on what kind of syntax we wish to adopt.) In terms of wider referential and pragmatic coherence rather than syntactic cohesion, however, there is another way of summarizing the semantic effect of these breaches of normal cohesion patterns. And this is the observation

that sentences that fail to cohere refer to different possible worlds, to different universes of discourse. A lack of concord establishes a non-unity of a potential referent and refers the non-concordant elements to different worlds. Collocations assign different members of homonymic or polysemic sets into different worlds. Shifts of genericity move the discourse from the world of specific referents to the generic world or vice versa. And contradictions of patterns of old and new information also assign sentences to different worlds: if of two potentially coreferent phrases the first is marked as old and the second as new information, these phrases cannot refer to the same referent: the two referents must exist in different worlds.

4. Pragmatic indication of non-coherence

In the following types of instances, it would be more difficult to explain the difference between the worlds referred to in terms of formal syntax, at least within the current confines of syntax. Should we conceive of a syntax capable of formalizing for instance matters of time shift and of causality, these instances could have been listed in section 3.

4.1. Shift of referent, appearing as time shift, can weaken the reference.

(22i)(a) Next week I shall buy a Ford. The car in which President Wilson rode down the Champs Elysées was black.

If we hear or read this text today and know that President Wilson's heyday in Paris was in 1919, we are left wondering what is the connection between the modern Ford and President Wilson's car. In such instances we need a connection between the referents. The mere connection between Ford and car is not sufficient to establish a proper cross-reference. The coherence improves decisively through the addition of a connection, for instance in causal terms:

(22i)(b) Next week I shall buy a Ford. The car in which President Wilson rode down the Champs Elysées was black. Therefore I think I shall try to get a black Ford because I have always admired Wilson and I too want to drive down the Champs Elysées in a black car.

Though eccentric, such a text is perfectly coherent.

4.2. Explicit or implicit contradiction makes sentences refer to incompatible possible worlds, and the text becomes pragmatically unacceptable.

In texts such as

(23) (a) I have a blue-eyed wife. She has brown eyes.
(b) My dog is a collie. It is a German shepherd.

the contradiction blocks the coreference: in the same universe of discourse a person cannot have both blue and brown eyes, a dog cannot be both a collie and a German shepherd. Note once again, however, that the receiver of such a text is apt to look for metaphoric interpretations: blue-eyed in (23a) might thus be taken to mean 'innocent' or 'optimistic', which would improve the acceptability of the text.

The contradiction can also be implicit and embedded in an implication or presupposition, as in

(24) (a) John had drunk all the wine. Suddenly he poured it on the floor.
(b) There were three nude girls on the beach. After half an hour they all took their skirts off.

Once John had drunk all the wine, he could hardly pour it on the floor (vomit instead of pour would improve the text); once the girls were nude, they had no skirts to take off. Here too, then, sentences lack coherence if they obviously refer to incompatible worlds.

Similarly, the cross-reference is destroyed in instances such as

(25) (a) ??I wish I could afford a car. It is red.
(b) *I haven't got a car. It is red.
(c) ?I hoped to catch a fish. It was an enormous tuna.

(25a-b) both begin by referring to a world where I have no car, and go on assigning qualities to this non-existent object. (25c) is a better text because one can hope to catch a specific kind of fish; in (25a), a car does not change its price according to colour, so that red seems irrelevant to the speaker's desires.

Disambiguation of references can actually take place on pragmatic

grounds in instances such as

(26) Last night I was watching the old tv-film showing an astronaut jumping about on the moon. I was also baby-sitting with Peter. Actually he was also driving a jeep between the craters.

He in the third sentence must refer to the astronaut rather than to Peter: astronauts drive jeeps between craters, whereas boys who still need baby-sitters do not. In choosing an antecedent for an anaphoric reference we thus reckon with pragmatic probabilities and possible worlds. We do not have to choose the nearest antecedent that satisfies the requirements of formal concord. Rather we match the text against a set of possible worlds and assign the antecedent according to the interpretation which best fits the most likely world. In terms of Martin Joos's semantic axiom number one, we choose the interpretation that makes an item maximally predictable and thus maximally redundant, and minimally surprising (Joos 1972). This is a general phenomenon observable in, for instance,

(27) (a) John said that Peter had told him that the professor had praised his thesis.

(b) John boasted that Peter had told him that the professor had praised his thesis.

In (27a), his is ambiguous unless we know who wrote the thesis. In (27b), we can disambiguate his if we know something about the relations between John and Peter. If John has no reason to feel proud of Peter's doings, his must refer to John; if, however, John has good reasons to be proud of what Peter does (if, for instance, John is Peter's father or teacher), the sentence is still ambiguous. What we do in interpreting such sentences is that we match the semantic pattern indicated by boast (which involves a person's mentioning something he is proud of -- perhaps unduly -- to another person) against the various possible worlds that arise out of different interpretations of the text. The best fit between the configuration of roles implied by boast and one of the possible worlds of the text decides which interpretation we prefer. (See further Enkvist 1976.)

If two sentences are connected by a causality relation they can cohere without further overt cohesion markers. Compare

(28) (a) It was cold. Susan was wearing her thickest fur-coat.

(b) It was cold. Susan was in a filthy mood.

(c) It was cold. Susan was lisping as usual.

The causality can be made clear by causal subordination:

(28) (a') It was cold, which made Susan wear her thickest fur-coat.
(a") Susan was wearing her thickest fur-coat because it was cold.
(b') It was cold which caused Susan's being in a filthy mood.
(b") Susan was in a filthy mood because it was cold.
(c') It was cold which could be noticed in Susan's lisping as usual.
(c") Susan was lisping as usual because it was cold.

(28a'-a") are all right because we all know worlds in which it is rational to wear furs against the cold. (28b'-b") may be acceptable because we know, or can imagine, worlds in which people hate the cold. But (28c'-c") are odd: experience tells us that people lisp irrespective of the temperature. This is the reason why (28a) is the most acceptable, (28c) the least acceptable of the texts under (28). We can, then, test causal ties between sentences by subordination and by matching the resulting possible world with the world of the discourse.

When speaking about the connection between possible worlds and intersentential coherence we should, finally, remember that certain texts-- in absurd drama for instance --use abnormal patterns as symptoms of the world's craziness. Statements such as

(29) (a) I always buy my vegetables in the market because there they are more expensive.
(b) Thelma was wearing her thinnest summer dress because it was cold.

may be effective precisely because they break the usual patterns of causality and suggest possible worlds different from the everyday, just as poets such as e.e. cummings achieved peculiar effects by adopting a syntax different from the usual.

5. Borderline cases

So far, then, we have been able to spot the lack of connection between two sentences for one of two reasons. Either there has been a lack of syntactic connectivity, or the kind of lack of pragmatic plausability where

the sentences do not simultaneously fit into one and the same possible world. All of these instances have presented some syntactic or pragmatic evidence of non-connectivity.

But there are also instances in which such direct evidence of non-connectivity does not exist, and where direct evidence of connectivity is also lacking. For instance,

(30) The student's lesson was criticized by the inspector.
Whenever the islanders did the author a service, they expected him to make them a gift.

I have chosen these particular sentences on purpose to illustrate my point: whether two neighbouring sentences connect or not, when there is not explicit evidence for or against, depends on the interpreter and on his interpretation of the message. We are all familiar with private and semi-private language, for instance between colleagues or within a family, which is transparent to those in the know, and completely opaque to outsiders. For instance, to quote a piece of actual domestic dialogue from my own home,

(31) Tua: "Peckie refused again."
Nils: "Oh damn. Where are the gloves?"

To capture the connection one must know that Peckie the cat was supposed to take penicillin, which he disliked; experience had taught us the wisdom of using gloves when gently persuading him to take his medicine. To an outsider such a dialogue might well seem incoherent, however clear it is to those in the know.

When hearing such a message, the receiver assumes that this interlocutor obeys the conversational maxims accepted as normal behaviour. The message is expected to make sense. Therefore the receiver does his utmost to extract a maximum of meaning out of the text. And the extraction of meaning involves tracing intersentential links. Thus when we are exposed to a text such as (30), we at once begin trying to maximize its meaning. We test a number of hypotheses: perhaps the student had said that the islanders always refused gifts? Perhaps this statement is what the inspector criticized? Perhaps the inspector was an islander and did the student a good turn by criticizing him and therefore deserved a gift? Only if all such attempts at forming hypotheses about possible cohesion patterns fail, or if the hypotheses are disproved by what comes next, do we give up and dismiss the text as incoherent. Text (30), the reader may wish to know, was a juxtaposition of two unconnected

sentences picked at random out of an anthology: they had no connection in their original context. But this is irrelevant. What matters is whether we, as receivers of the message (30), succeed in finding the sentences interlinked or not.

Often a receiver is prompted to look for metaphoric interpretations to extract maximal sense from, and to find cohesive ties in, a text. This is true between sentences as well as within the sentence. Compare

(32) (a) Before 1968, twice two was four.
(b) Before 1968, a number of things were always true. Twice two was four.

Here before 1968 clashes with our knowledge that twice two is always four, even though in (b) there is an obvious tie between number of things were always true and twice two is four. We are therefore compelled to a metaphorical reading where twice two was four stands for something like 'the world was still a rational and orderly place'.

6. Iconic homomorphism as pseudo-coherence

Finally, at a different level of linguistic structure, there are instances where a text gains in cohesion thanks to a formal isomorphism which is not backed up by semantic coherence. That is, two neighbouring sentences are phonetically or syntactically isomorphic, but fail to cohere semantically.

(33) I went to town to see my dearest Sue.
On Daddy's desk it saw a tube of glue.

These two sentences are metrically isomorphic and share a rhyme. Even so, as such they do not even qualify as doggerel verse because they have no apparent semantic or cross-referential connection. At best they might come from different parts of the same poem, or then the first line might end and the second begin a section of a poem. There are also instances of syntactic isomorphism:

(34) The big bad wolf ate the pretty little baby.
The sumptuous four-poster bed dominated the blue-curtained master bedroom.

Both sentences have identical structures at one level of syntactic description: both consist of the + two qualifiers + substantive + transitive verb + the + two qualifiers + substantive. Without additional clues, such an isomorphism alone is not enough to establish cohesion or coherence. It is another matter that contextual isomorphisms of these kinds may increase the acceptability of sentence patterns that might seem odd without such justification. For instance,

(35) ?To me the book she will not give.

looks odd in isolation because of its highly marked thematic structure involving double topicalization. But in the couplet

(36) To me the book she will not give:
She thinks I should not read but live.

its acceptability improves. Now there is a motive for the choice of the highly marked sentence pattern.

7. Conclusion

The examples cited here have supported the view that total coherence is not only a matter of cohesion on the textual surface. If a text is to be well formed it must have semantic coherence as well as sufficient signals of surface cohesion to enable the receiver to capture the coherence. And there are pragmatic constraints on this semantic coherence. In semantic terms one could suggest that a text is understood to be coherent if its sentences conform to the picture of one single possible world in the experience or imagination of the receiver, and if this pragmatic unity is adequately signalled on the textual surface. Adequately, that is, for the receiver to grasp the connections, including lexical cross-references, and to build up the corresponding world picture. Thus mere mechanical linking of neighbouring sentences, as in (1), is not enough. If not supported by a pragmatic coherence, the result is mere pseudo-coherence, not full coherence.

In conclusion it is proper to stress that here I have been primarily concerned with coherence as a qualitative concept: either two sentences cohere or they do not. Even so, I have been compelled to distinguish between

degrees of coherence. Some sentences and texts are intuitively felt to cohere more strongly, others more weakly, and some not at all. This leads us to the problem of measuring degrees of coherence in a text. Is it in fact possible to rank texts on a scale of cohesive tightness? Intuitively, yes: some texts seem closely argued, tight, and logically strict, whereas others are loose, rambling, and lacking in logic. Here I can only remind the reader that there are, in theory, two major approaches to measuring degrees of cohesion in texts. One is based on elicitation: we ask groups of suitably selected people to rank texts according to their impressions of their coherence. (The minimum group in elicitation experiments is, of course, the linguist himself.) In practice, this turns out to be an exercise more like rhetorical or literary criticism than strict linguistics. The other approach presupposes an ability of tracing cohesive devices in a text and of classifying and counting them (for an attempt restricted to surface cohesion, see Buxbinder and Rosanov 1975).

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